REDMOND

WATER QUALITY REPORT

your drinking water

CityofRedmond
WASHINGTON

SUMMER 2011
PWS ID: 5371650

CITY OF REDMOND
do you value your drinking water?

Water conservation demonstration garden

Safe public drinking water is something we all expect and deserve. In Redmond our sources of supply remain pure and plentiful, but they are also sensitive and vulnerable to contamination. The Wellhead Protection Program, the Source Improvement Project and water facility and security upgrades are examples of our commitment to preserving the quality and quantity of this precious resource.

In this report you will learn where your drinking water comes from; what is in it and how it is protected, treated and monitored. You will also learn about steps we can all take to help conserve and protect our drinking water.

Mayor John Marchione

INFORMATION FROM THE EPA
all about drinking water

The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, and can pick up substances resulting from the presence of animal or human activity.

Substances and contaminants that could be present in source water include:

Microbes such as viruses and bacteria, which may come from septic systems, livestock, and wildlife.

Inorganic chemicals such as salts and metals, which may be naturally occurring or result from urban stormwater runoff, wastewater discharges, and farming.

Pesticides and herbicides from agriculture, urban stormwater runoff, and residential uses.

Organic chemicals both synthetic and volatile, which are byproducts of industry and can also come from gas stations, dry cleaners, urban stormwater runoff, and septic systems.

Radioactive contaminants, which can be naturally occurring or result from petroleum production or mining activities.

In order to ensure the safety of tap water, the EPA regulates the amount of contaminants allowed in public drinking water. The FDA regulates the contaminants in bottled water, which must provide a similar degree of safety.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 800-426-4791.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at 800-426-4791.

WHERE DOES MY WATER COME FROM?

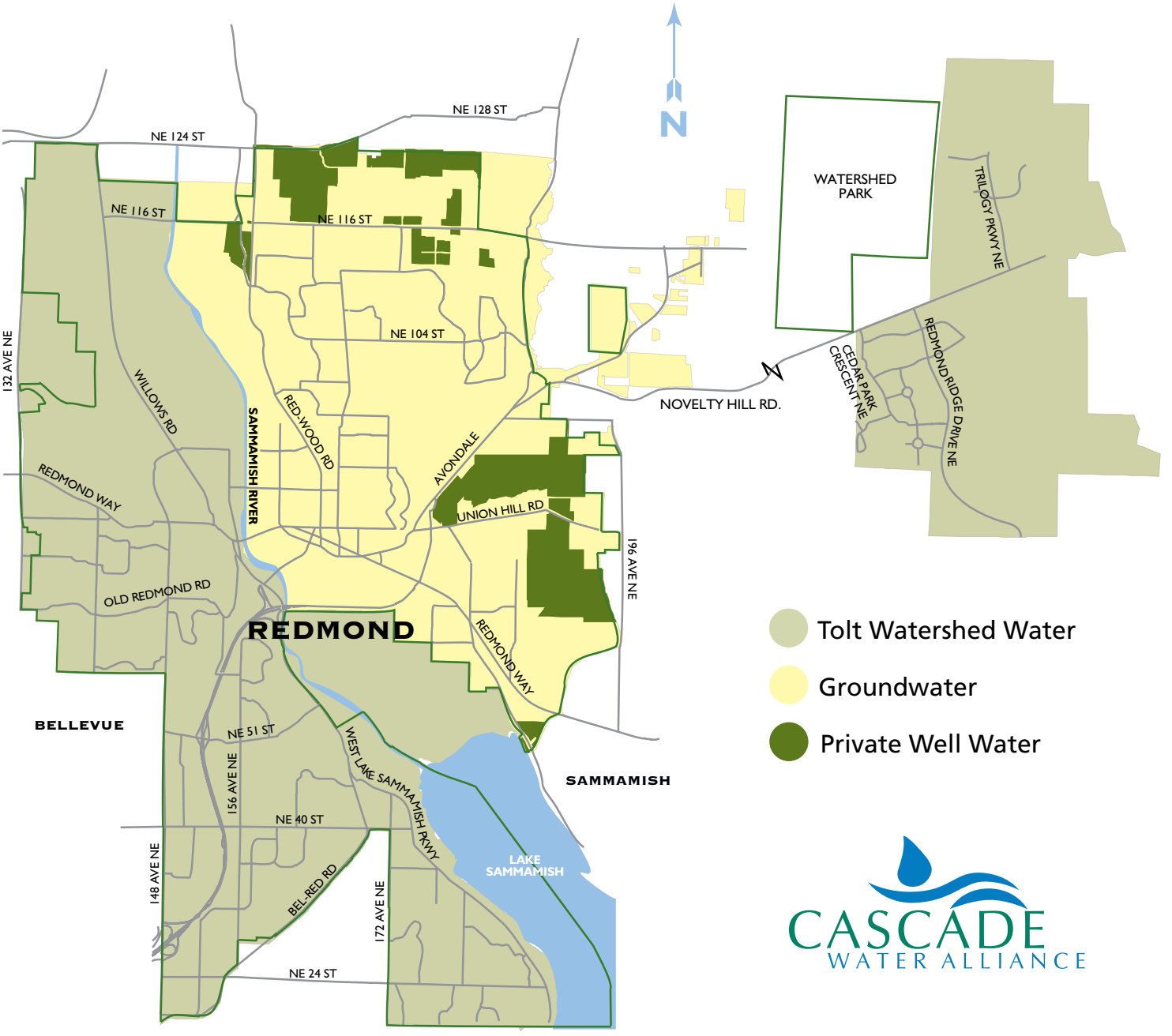
The City of Redmond has a hybrid water system.
Where your water comes from depends on where you live.

THE TOLT WATERSHED

Residents on the west side of Lake Sammamish and the Sammamish River, and those who live in Redmond Ridge and Trilogy are served water that comes from the Tolt Watershed in the Cascade Mountains.

THE GROUNDWATER SYSTEM

Residents east of Lake Sammamish and the Sammamish River are supplied by groundwater from the City's well system. Depending on demand conditions, Tolt water may be blended with the groundwater.



CASCADE WATER ALLIANCE

THE TOLT WATERSHED

From the Cascade Mountains to your tap

The Tolt Reservoir and Watershed are located 15 miles east of Redmond in the Cascade Mountains. Rivers, streams and snowmelt are impounded here to make up the reservoir supply. The water travels through a supply pipeline to Redmond and other Eastside water districts on its way to Seattle. The City of Seattle owns the Watershed and pipeline. Redmond, as a member of the Cascade Water Alliance, buys this water and both cities monitor and test it to maintain quality.

Watershed Protection

The Tolt Watershed covers nearly 14,000 acres and is closed to public access. Seattle's aggressive watershed protection plan safeguards the water supply from degradation and human intrusion. However, according to the State Department of Health, all surface waters in Washington are given a susceptibility rating of "high" regardless of whether contaminants have been detected. Contamination that might occur would most likely be from soil erosion or animal activity.

Treatment

Water treatment of the Tolt supply consists of chlorine disinfection, fluoridation for dental health, and mineral additives (calcium oxide and sodium bicarbonate). These help reduce the water's natural corrosive effect on plumbing. A filtration and ozone treatment facility has been in operation since 2001. Filtration removes organic material and makes the water cleaner and clearer. Ozone kills tough pathogens like giardia and cryptosporidium. In 2010, cryptosporidium was tested for and not detected in 3 raw water samples.

2010 WATER QUALITY DATA—TOLT SYSTEM

Hardness: 27 mg/l or 1.5 grains per gallon pH: 8.1-8.5

Detected Compounds	Units	Levels		EPA Limits		Typical Sources
		Average	Range	MCLG	MCL	
FLUORIDE	ppm	1.0	0.9-1.2	4	4	Additive to promote dental health
TURBIDITY	NTU	0.07	0.04-0.11	NA	TT	Soil runoff
TTHM	ppb	30.5	21-39	NA	80	By-products of chlorine disinfection
HAA5	ppb	25	20.5-31.2	NA	60	By-products of chlorine disinfection
CHLORINE	ppm	0.80	0.10-1.38	NA	4 MRDL	Additive that kills germs
TOTAL ORGANIC CARBON	ppm	1.3	1.2-1.4	NA	TT	Naturally present in the environment
BARIUM	ppb	1.3	(one sample)	2000	2000	Erosion from natural deposits
NITRATE	ppm	0.13	(one sample)	10	10	Erosion from natural deposits
CHROMIUM	ppb	0.6	(one sample)	100	100	Erosion from natural deposits

MCLG (maximum contaminant level goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

MRDL (maximum residual disinfectant level)

MCL (maximum contaminant level): The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.

PPM (Parts Per Million): 1 ppm = 1 mg/l

A list of other contaminants that were not detected, are secondary or unregulated, is available upon request.

THE GROUNDWATER SYSTEM

Redmond's renewable resource

In Redmond, east of the Sammamish River, there are underground, water bearing formations called aquifers. For more than 50 years these aquifers have supplied nearly 35% of Redmond's drinking water. In 2010, the City's wells pumped 790 million gallons from the aquifers. This resource is listed by the Department of Health as having high vulnerability to potential contamination, because the aquifers are shallow.

Groundwater Protection

In 2003, Redmond's City Council passed the Wellhead Protection Ordinance. Shortly thereafter, the Wellhead Protection Program was established to protect our groundwater.

Wellhead Protection staff help prevent pollution and help protect our groundwater by:

- Collecting hazardous materials data and visiting businesses to help identify and eliminate sources of pollution that could contaminate the groundwater.
- Reviewing development proposals to ensure that groundwater will not be adversely impacted.
- Collecting groundwater samples and water levels in monitoring wells throughout the City and sharing the results with the Public Works Water Quality Office.

Redmond is in compliance with all three major components of Washington's Source Water Assessment Program: Wellhead Protection Area Delineation, Contaminant Source Inventory, and Susceptibility Assessment. The findings are available to all interested parties. To learn more, contact Elaine Dilley at edilley@redmond.gov or call 425-556-2757.

Treatment

Redmond groundwater is treated with three common drinking water additives: sodium fluoride, chlorine disinfection, and sodium hydroxide. Fluoride contributes to dental health. Chlorine acts as a safety net against disease causing germs called pathogens. Sodium hydroxide raises the pH of the water, thereby making it less corrosive to household plumbing. The City is currently phasing out the sodium hydroxide in favor of air stripping to reduce corrosion without the use of chemical additives.

2010 WATER QUALITY DATA—GROUNDWATER SYSTEM

Hardness: 60-90 mg/l or 4-5 grains per gallon pH: 7.5-7.9

Detected Compounds	Units	Levels		EPA Limits		Typical Sources
		Average	Range	MCLG	MCL	
FLUORIDE	ppm	1.04	0.8–1.3	4	4	Additive to promote dental health
NITRATE	ppm	0.85	0–1.4	10	10	Erosion from natural deposits
TOTAL COLIFORM	% positive	<1%	1 out of 650	0	5%	Naturally present
TTHM	ppb	18.4	8.7–31.6	NA	80	By-products of chlorine disinfection
HAA5	ppb	7.3	0–22.0	NA	60	By-products of chlorine disinfection
CHLORINE	ppm	0.77	0.10–1.28	NA	4 MRDL	Additive that kills germs
PERCHLORO-ETHYLENE	ppb	0.25	0–1.0	NA	5	Discharge from dry cleaners

PPB (Parts Per Billion): 1 ppb = 1 ug/l

NTU A measurement of water clarity. High turbidity can interfere with disinfection.

TT (treatment technique): A required process intended to reduce the level of a contaminant in drinking water.

TTHM (total trihalomethane): Disinfection byproducts

HAA5 (Haleoacetic acid): Disinfection byproducts

NA Not Applicable

A list of other contaminants that were not detected, are secondary or unregulated, is available upon request.

KEEPING THE LEAD OUT
what you can do to help

There is no detectable lead or copper in any of the sources of Redmond drinking water. However, lead is a serious contaminant and can be found in the water of some homes.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing.

The City of Redmond is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your cold water tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline, 800-426-4791, or at www.epa.gov/safewater/lead. You can also get information from Redmond Water Quality at 425-556-2847.

Redmond's drinking water is treated to minimize corrosion in the home. Redmond began a city-wide monitoring program in 1992. Since then, only 9 of 362 homes tested exceeded the action level (15 ppb) for lead. The next monitoring program will be in June 2012.

2009 LEAD AND COPPER CITY-WIDE MONITORING PROGRAM

Compounds & Units	MCLG	90th Percentile Action Level*	90th Percentile Residential Level	# of Homes Exceeding Action Level*	Sources
LEAD (ppb)	0	15 ppb	3 ppb	1 out of 38	Corrosion of household plumbing
COPPER (ppm)	1.3 ppm	1.3 ppm	Not Detected	0 out of 38	Corrosion of household plumbing

* **ACTION LEVEL** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

WHAT IS A CROSS CONNECTION?

Cross connection is the point at which the public water supply can or does meet any polluting element. The water faucets for a hose, an irrigation system, or a fire suppression system are cross connection points because a polluting element could potentially enter and mix with the clean water supply.

WHAT IS A BACKFLOW ASSEMBLY?

A backflow assembly is any device that prevents backflow at a cross connection point. These devices range in complication and size depending on the need of protection, which is determined based on the hazard level.

Washington State Department of Health, Office of Drinking Water, has the responsibility of regulating public water systems to ensure the water that is supplied to customers of public water systems is safe

for human consumption. The purpose of the Drinking Water Regulations is to protect public health of consumers using public drinking water supplies.

Owners of backflow prevention assemblies installed to protect the public water system are required to have those backflow assemblies tested by a certified Washington State Backflow Assembly Tester annually.

For information about Redmond's Cross Connection Program contact the Water Quality Division at 425-556-2847.

2010 ANNUAL WATER USE
efficiency performance report

The Redmond Water Utility is pleased to provide you with its third water conservation performance report. This report, which is required by the Washington State Department of Health (DOH) Water Use Efficiency Rule (WUE), includes information about our metering status, our distribution system leakage and progress made towards our water conservation goals.

Metering and Distribution Leakage Summary

The Redmond water system is fully metered. The state requires that water suppliers maintain their distribution system leakage at 10% or less for a rolling 3-year average. The state recognizes that a certain amount of leakage is expected and unavoidable. The leakage is based on the total water produced by the wells and purchased from Cascade Water, less the amount of water sold to customers and used for other system purposes like flushing and fire fighting. The estimated total leakage for Redmond for 2010 was 2.49% and the rolling 3-year average is 2.15%, well within the state DOH leakage standard.

2010 Redmond Conservation Program Savings With Cascade

In addition to rebates and unit number savings, Cascade worked with Redmond to provide outreach to residents including Fix a Leak Week, ads for local papers, training videos and support for regional events such as the Spring Garden Fair and the national WaterSense program. Cascade also brought its Conservation Road Show to Derby Days and other local events.

The final contributions to Redmond's water conservation program, fulfilling its goal to provide outreach and education for its customers, were sponsoring the Natural Yardcare Program and the Redmond Water Conservation Garden. Redmond staff also co-chaired the Sammamish Watershed Festival that attracted 810 students, sponsored 59 classroom presentations for 1498 elementary students and worked with Puget Sound Energy in 14 junior high classrooms, reaching 397 students.

For information about Water Conservation programs, please visit www.cascadewater.org.

2010 WATER CONSERVATION PROGRAM RESULTS

PROGRAM	ELIGIBLE CUSTOMER SECTORS			SAVINGS (GPD)
	Single Family	Multi-Family	Commercial	
Clothes Washer Rebates	X		X	5,303
HET Toilet Replacements	X	X	X	24,175
Rain Sensor Installations	X	X	X	96
Irrigation System Upgrade Rebates and Evaluation		X	X	2,610
Leak Detection Dye Strip Distribution	X			17,056
Dishwashers			X	1,200
Showerhead and Aerator Replacements		X	X	3,774
Water Conservation Order Page	X			559
EST 2010 SAVINGS (Gallons Per Day)				54,773

Peter's Creek

City of Redmond
Natural Resources Division–2NPW
15670 NE 85 Street PO Box 97010
Redmond, WA 98073-9710

E C R W S S
POSTAL PATRON

additional information

Redmond Public Works
Water Quality Office
www.redmond.gov/environment/drinkingwater
425-556-2847

Washington Department of Health
www.doh.wa.gov/ehp/dw
800-521-0323

Environmental Protection Agency
www.epa.gov/safewater
Safe Drinking Water Hotline
800-426-4791

American Water Works Association
www.drinktap.org
www.awwa.org

Redmond Wellhead Protection Program
www.redmond.gov/environment
groundwater@redmond.gov
425-556-2825

get involved

It's your drinking water and your input is important. Attend and comment at City Council meetings on the first and third Tuesday of the month at 7:30 pm in the Council Chambers, located at 15670 NE 85th St. Agendas for the meetings can be found on the City's website *(www.redmond.gov)* or posted in the lobbies of City Hall and the Public Safety Building.

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If you have questions about this report or about your drinking water, contact Tom Fix, Senior Drinking Water Analyst, at 425-556-2847 or tfix@redmond.gov.

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Este informe contiene información muy importante sobre su agua de beber. Tradúzcalo o hable con alguien que lo entienda bien.

"本报告含有饮用水问题的重要信息. 请人翻译或与懂英文的人交流一下."

이 보고서에는 식수에 관한 중요한 정보가 담겨있습니다